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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/596,859 | 06/27/2006 | Per Johan Anders Nystrom | P19103-US1 | 1377 |

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| EXAMINER |
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JAMA, ISAAK R

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| ART UNIT | PAPER NUMBER |
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4163

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10/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/596,859 | Applicant(s) NYSTROM ET AL. | |
| | Examiner ISAAK JAMA | Art Unit 4163 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/27/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 14, 15, 17-19, 22-25, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Application Publication Number 2003/0169681 (Li et al.)

3. Regarding claims 14 and 25, Li teaches a method and a mobile station in a multicarrier wireless telecommunication system for radio communication between base stations and mobile user stations (Figure 1B, page 3, paragraph 0043), comprising the step of: transmitting information signals, over an air interface, relating to operational bands of the radio spectrum used by the system (Figures 2 A-C); wherein the signaling comprises information of the bandwidth (Figure 1A, page 3, paragraph 0040) and location, in the spectrum of the operational bands (Figure 2A, i.e. cluster A as being occupied and the other unshaded clusters as being free) as part of the information in one or more sub carriers of the bands (Figure 10 A; shown shaded are the occupied sub-carriers).

4. Regarding claim 15, Li teaches that the location information is explicitly signaled (Figure 10 A) or implicitly derivable from synchronization signals (Figure 1B, page 3, paragraph 0043).

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5. Regarding claim 17, Li teaches that the size information is repeated regularly in subsequent carriers, or sub-carriers, of the operational band (Figure 10, cell A, page 9, and paragraph 0117).

6. Regarding claim 18, Li teaches that the information comprises the start and stop frequencies of the band and, thereby, the bandwidth (Figure 12).

7. Regarding claim 19, Li teaches that the information comprises an identifying number representing the size and location of available operational bands (Figure 9, cell A, page 8, and paragraph 0013).

8. Regarding claim 22, Li teaches a mobile user station requests access to a multicarrier band with N carriers (Figure 1A) for downloading information, comprising the steps of: the mobile station searching the radio interface for an N-carrier band by looking for location and size information; the communication system assigning a free band with $N+\epsilon$ carriers to the mobile upon the request where ϵ is zero or a small number compared to N; and, the mobile station downloads the information (page 3, paragraph 0040; i.e. $N=512$ sub-carriers, and ϵ being zero).

9. Regarding claim 23, Li teaches a wireless multicarrier telecommunication system, comprising: a traffic controlling centre (Figure 13, # 1301); and, transmitting units controlled by said traffic controlling centre (Figure 13, #1305, see control signal), wherein the transmitting units transmit information signals relating to available resources of the system to mobile units (Figure 13, # 1305 transmitting OFDM signals), wherein the information signals comprise information about the size and location of

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available bandwidth in a number of operational bands allocated to the system (Figure 10 A; shown shaded are the occupied sub-carriers).

10. Regarding claim 24, Li teaches a base station node in a multicarrier telecommunication system, comprising: transmitting means for transmitting information relating to properties of available operational bands of the spectrum allocated to the system (Figure 13, # 1305, page 2, paragraph 0023), wherein the transmitting means include means for transferring data related to size and location of the available operational bands (Figure 10 A; shown shaded are the occupied sub-carriers).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 16, 20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication Number 2003/0169681 (Li et al.) in view of U.S. Patent Application Publication Number 2003/0081538 (Walton et al.).

13. Regarding claims 16 and 26, Li teaches that the signaling is received by the mobile user stations which detect the information about available blocks of spectrum (page 3, paragraph 0043) and stores it into a memory. But Li does not specifically teach that the mobile includes a memory for storing the information about the available blocks. Walton teaches that a pilot may be transmitted by each transmitter unit (i.e. base

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station) to assist the receiver units (i.e. mobile station) perform acquisition, timing synchronization, carrier recovery, handoff, channel estimation, coherent data demodulation (abstract), and that these techniques are implemented in hardware, software or combination thereof (Page 10, paragraph 0124), and that these combinations are stored in memory of the mobile (Figure 2, page 10, paragraph 0125). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Walton in the sub-carrier allocation system of Li in order for the mobile to have the information handy for future use.

14. Regarding claim 20, Li further teaches that the mobile user stations repeatedly scan the information signaling about changing conditions relating to the operational bands (page 3, paragraph 0044). But Li does not teach that the repeated scanning of the information signaling (i.e. pilot symbols) is for updating its memory. Walton teaches that a pilot may be transmitted by each transmitter unit (i.e. base station) to assist the receiver units (i.e. mobile station) perform acquisition, timing synchronization, carrier recovery, handoff, channel estimation, coherent data demodulation (abstract), and that these techniques are implemented in hardware, software or combination thereof (Page 10, paragraph 0124), and that these combinations are stored in memory of the mobile (Figure 2, page 10, paragraph 0125). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Walton in the sub-carrier allocation system of Li in order for the mobile to have any updated information.

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15. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication Number 2003/0169681 (Li et al.) in view of U.S. Patent Number 6,650,655 (Alvesalo et al.).

16. Regarding claim 21, Li has been discussed above in regard to claim 14, but Li fails to teach that the operational bands belong to different network operators and wherein the subscribers of an operator may partly or wholly have access to the operational bands of another operator. Alvesalo teaches a system and method for allocating transmission resources between different networks where the available bandwidth is shared among the different networks (Figure 2, column 11, lines 29-34). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the resource allocation system of Alvesalo in the sub-carrier allocation system of Li in order for the mobiles in the system to have a seamless communication.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Number 6,539,203 (Herrig et al.) teaches a method for determining cellular radio channel assignments to minimize interference due to intermodulation products. U.S. Patent Application Publication Number 2006/0045001 (Jalali) teaches a transmission of signaling in an OFDM-based system. U.S. Patent Application Publication Number 2002/0145988 (Dahlman et al.) teaches a cellular radio

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communication system with frequency reuse. U.S. Patent Number 7,039,001 (Krishnan et al.) teaches channel estimation for OFDM communication systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ISAAK JAMA whose telephone number is (571)270-5887. The examiner can normally be reached on 7:30 - 5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Robinson can be reached on (571) 272-2319. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/IRJ/

/Mark A. Robinson/
Supervisory Patent Examiner, Art Unit 4163